

PATENT APPLICATION  
Docket No. SLA1031

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Andrew R. Ferlitsch	)	
		)	
Serial No.:	10/002,781	)	
		)	
Filed:	October 29, 2001	)	Group Art
		)	Unit: 2625
For:	METHODS AND SYSTEMS FOR PRINT JOB	)	
	INTERLEAVING	)	
Examiner:	Murphy, Dillon J.	)	
		)	

**APPELLANT'S APPEAL BRIEF**

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

An identical appeal brief to that contained herein was filed via EFS on April 13, 2007. The requisite fee was inadvertently not paid at that time. Resubmission of the appeal brief filed on that date is filed herewith, along with the proper fee and the fee for extension of time.

An Office Action dated November 17, 2006 rejected all claims (1-3, 5, 7-17) in the present application. A Panel Decision from Pre-Appeal Brief Review dated March 13, 2007 maintained the rejection. A Notice of Appeal was transmitted by EFS on February 16, 2007. Appellant's Appeal Brief is being filed herewith.

**1. REAL PARTY IN INTEREST**

The real party in interest is the assignee of record, Sharp Laboratories of America, Inc.

## **2. RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences.

## **3. STATUS OF CLAIMS**

All claims, claims 1-3, 5, 7-17, stand rejected.

Claims 1-3, 5, 9-11, 13, 16 and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeda, U.S. Patent No. 6,229,622, in view of Wanda, U.S. Patent No. 6,474,881.

Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeda in view of Wanda and further in view of Utsunomiya et al., U.S. Patent No. 5,822,500.

Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeda in view of Wanda and further in view of Keeney et al., U.S. Patent No. 6,748,471.

Claims 12, 14 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeda in view of Wanda and further in view of Rabjohns et al., U.S. Patent No. 5,697,040.

Appellant appeals the rejections of claims 1-3, 5 and 7-17.

Claim 13 is objected to because of the following informalities: on line 10, the word “and” should be inserted after the semicolon “;”. Applicant agrees to the appropriate correction.

Claim 14 is objected to because of the following informalities: on line 9, the word “and” should be inserted after the semicolon “;”. Applicant agrees to the appropriate correction.

Claim 16 is objected to because of the following informalities: on line 9, the word “and” should be inserted after the semicolon “;”. Applicant agrees to the appropriate correction.

## **4. STATUS OF AMENDMENTS**

No amendments have been filed in response to the final rejection mailed on November 17, 2006.

## **5. SUMMARY OF CLAIMED SUBJECT MATTER**

Independent method claims 1, 13 and 14, system claim 16 and computer-readable medium claim 17 all comprise the elements of partitioning an original print job into a plurality of sub-jobs with a non-printer computing device, tagging each sub-job associated with the original print job with the same output mode code and interleaving, with the non-printer computing device, the sub-jobs with other print jobs to generate a combined print job.

The element of partitioning an original print job into a plurality of sub-jobs is described in the specification on page 15, lines 19-21, page 17, line 25 - page 18, line 1, page 18, lines 21-25, page 19, lines 11-14 and other locations, and in reference to Figure 8.

The element of tagging each sub-job associated with the original print job with the same output mode is described in the specification on page 16, lines 10-23, page 18, lines 14-19 and other locations, and in reference to Figure 8 and other figures.

The element of interleaving the sub-jobs with other print jobs to form a combined print job is described with reference to Figure 8. A description of this element is found in the specification on page 16, lines 5-7, page 16, line 24 - page 17, line 2, page 18, lines 8-13, page 19, lines 21-24 and elsewhere.

## **6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

- I. Claims 1-3, 5, 9-11, 13, 16 and 17 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeda, U.S. Patent No. 6,229,622, in view of Wanda, U.S. Patent No. 6,474,881.
- II. Claim 7 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeda in view of Wanda and further in view of Utsunomiya et al., U.S. Patent No. 5,822,500.
- III. Claim 8 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeda in view of Wanda and further in view of Keeney et al., U.S. Patent No. 6,748,471.

- IV. Claims 12, 14 and 15 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeda in view of Wanda and further in view of Rabjohns et al., U.S. Patent No. 5,697,040.

## **7. ARGUMENT**

- I. Rejection under 35 U.S.C. § 103(a) over Takeda, U.S. Patent No. 6,229,622 (hereinafter, “Takeda”) in view of Wanda, U.S. Patent No. 6,474,881 (hereinafter, “Wanda”)  
i. Claims 1-3, 5, 9-11, 13, 16 and 17

Claims 1, 13, 16 and 17 are independent claims. Claims 2-3, 5 and 9-11 depend from claim 1 and comprise all the limitations therein.

Claims 1, 13, 16 and 17 are independent claims each comprising an element wherein a combined print job is generated by interleaving sub-jobs resulting from the partitioning of at least one original print job with any remaining original print jobs.

This rejection of the applicant's claims is improper, and the *prima facie* case of obviousness cannot be properly made. The CCPA had and the Federal Circuit has consistently held that when a §103 rejection is based upon a modification of a reference that destroys the intent, purpose or function of the invention disclosed in the reference, such a proposed modification is not proper, and the *prima facie* case of obviousness cannot be properly made (*In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (fed. Cir. 1984)).

The examiner's rejection is based on modifying the method of Takeda with the teachings of Wanda to generate a combined print job comprising interleaved sub-jobs resulting from the partitioning of at least one original print job and any remaining original jobs. Takeda and Wanda are not properly combinable or modifiable because the intended function of Takeda is destroyed in combination or modification with Wanda.

Takeda teaches methods of sequentially extracting spooled print data that has been received by a printer and spooled by a printer's internal spooler to an internal printer storage device. The printer spool area taught by Takeda is partitioned in advance (Takeda: column 6, lines 14-15) with each spool partition corresponding to a user or a type of PDL (column 6, lines 8-11). Takeda teaches alternately extracting predetermined amounts of print data from the partitions of the printer spool area (Takeda: column 7, lines 7-38; column 9, lines 22-25) and printing the smaller portions of the print jobs individually (Takeda: column 5, lines 23-34) thereby allowing smaller print jobs to print without waiting for completion of large print jobs. Wanda teaches grouping print jobs "to print continuously in the specified order by one operation a series of print jobs..." (Wanda: Abstract) thereby allowing the printing of a plurality of jobs without interruption of the group job (Wanda: column 1, lines 44-50).

Takeda and Wanda are not properly combinable or modifiable because the intended function of Takeda is destroyed in combination or modification with Wanda. If the alternately-extracted predetermined amounts of print data from the partitions of the printer spool area of Takeda (Takeda: column 7, lines 7-38; column 9, lines 22-25), are combined into a combined print job and printed as an uninterruptible print job, as in Wanda, then an intervening smaller print job received at the printer spooler of Takeda will not be printed until the completion of the combined print job, thereby destroying the intended function of Takeda by which smaller print jobs are allowed to print without waiting for completion of large print jobs.

Alternatively, Takeda and Wanda are not properly combinable or modifiable because the intended function of Wanda is destroyed in combination or modification with Takeda. Wanda's grouping of jobs, the combined job as cited by the examiner, is taught to effectuate uninterrupted printing of the group. Sending such a "combined" job to the printer of Takeda will effectuate the spooling of the job into a partition of the spooler from which portions of the jobs will be pulled to be printed in alternating sequence with portions of other jobs in other partitions, thereby interrupting the printing of the group or combined job.

The examiner's rejection of the applicant's claims is further improper and the *prima facie* case of obviousness cannot be properly made due to lack of basis in the art for combining and modifying the references. The MPEP §2143.01 provides that the mere fact that references can be combined or

modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination (*In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)).

The examiner asserts that Takeda and Wanda are combinable because “they are from a similar field of endeavor of network printing multiple jobs concurrently.” Takeda teaches methods of sequentially extracting spooled print data that has been received by a printer and spooled by a printer’s internal spooler to an internal printer storage device. The methods of Takeda thereby alleviate the need for users who are printing out small quantities of printed matter to wait while a large print job completes (Takeda: Abstract). Wanda, however, groups together jobs to allow the printing of a plurality of jobs without interruption of the group job. While both Takeda and Wanda are printing related, there is no teaching to combine a method for effectively interrupting a print job (Takeda) with a method for not allowing interruption of a print job (Wanda). In particular, there is no teaching in either Takeda or Wanda to send the combined job of Wanda to the partitioning printer of Takeda, nor is there teaching to recombine the alternately extracted predetermined amounts of print data from the partitions of the printer spool area of Takeda into a combined, uninterruptible print job.

The examiner acknowledges that Takeda does not disclose expressly a method comprising generating a combined print job comprising a plurality of user jobs, and the examiner relies on the teachings of Wanda for generating a combined print job comprising a plurality of user jobs.

The claimed embodiments of the applicant’s invention partition print jobs into sub-jobs and form a single logical print job by alternating sub-jobs from the separate print jobs at a non-printing device prior to any print job being sent to a printer. The combined print job may then be sent to the printer where the combined print job prints as a single job. This element is common to all independent claims.

Independent claim 1 comprises the element of:

“generating a combined print job, wherein said generating comprises interleaving said sub-jobs and any remaining original print with said non-printer computing device.”

Independent claim 13 comprises the element of:

“generating a combined print job, wherein said generating comprises interleaving said sub-jobs and any remaining original print jobs with said print system component.”

Independent claim 16 comprises the element of:

“a combiner for forming a combined print job, wherein said combiner comprises an interleaver for interleaving said smaller sub-jobs and any remaining original print jobs.”

Independent claim 17 comprises the element of:

“forming a combined print job, wherein said forming comprises interleaving said smaller sub-jobs with any remaining original print jobs.”

The applicant asserts that the element of the claimed embodiments of the applicant's invention is not the generation of a combined print job comprising a plurality of user jobs, but the generation of a combined print job comprising *interleaving* (emphasis added) sub-jobs and original print jobs. No combination of the cited prior art teaches this element.

II. Rejection under 35 U.S.C. § 103(a) over Takeda in view of Wanda and further in view of Utsunomiya et al., U.S. Patent No. 5,822,500 (hereinafter, “Utsunomiya et al.”)  
i. Claim 7

Claim 7 depends from claim 5, which depends from independent claim 1, and comprises all the limitations therein.

This rejection of the applicant's claim is improper and the *prima facie* case of obviousness cannot be properly made because the rejection is based upon a modification of a reference that destroys the intent, purpose or function of the invention disclosed in the reference as argued in section 7, subsection I, sub-subsection i. The examiner's rejection of the applicant's claims is further improper and the *prima facie* case of obviousness cannot be properly made due to lack of basis in the art for combining and modifying the references as argued in section 7, subsection I, sub-subsection i.

The examiner acknowledges that Takeda does not disclose expressly a method comprising generating a combined print job comprising a plurality of user jobs, and the examiner relies on the teachings of Wanda for generating a combined print job comprising a plurality of user jobs.

The claimed embodiments of the applicant's invention partition print jobs into sub-jobs and form a single logical print job by alternating sub-jobs from the separate print jobs at a non-printing device prior to any print job being sent to a printer. The combined print job may then be sent to the printer where the print job prints as a single job. This element appears in independent claim 1, from which claim 7 depends. The applicant asserts that the element of the claimed embodiments of the applicant's invention is not the generation of a combined print job comprising a plurality of user jobs, but the generation of a combined print job comprising *interleaving* (emphasis added) sub-jobs and original print jobs. No combination of the cited prior art teaches this element.

III. Rejection under 35 U.S.C. § 103(a) over Takeda in view of Wanda and further in view of Keeney et al., U.S. Patent No. 6,748,471 (hereinafter, "Keeney et al.")

i. Claim 8

Claim 8 depends from claim 5, which depends from independent claim 1, and comprises all the limitations therein.

This rejection of the applicant's claim is improper and the *prima facie* case of obviousness cannot be properly made because the rejection is based upon a modification of a reference that destroys the intent, purpose or function of the invention disclosed in the reference as argued in section 7, subsection I, sub-subsection i. The examiner's rejection of the applicant's claims is further improper and the *prima facie* case of obviousness cannot be properly made due to lack of basis in the art for combining and modifying the references as argued in section 7, subsection I, sub-subsection i.

The examiner acknowledges that Takeda does not disclose expressly a method comprising generating a combined print job comprising a plurality of user jobs, and the examiner relies on the teachings of Wanda for generating a combined print job comprising a plurality of user jobs.

The claimed embodiments of the applicant's invention partition print jobs into sub-jobs and form a single logical print job by alternating sub-jobs from the separate print jobs at a non-printing device prior to any print job being sent to a printer. The combined print job may then be sent to the printer



where the print job prints as a single job. This element appears in independent claim 1, from which claim 8 depends. The applicant asserts that the element of the claimed embodiments of the applicant's invention is not the generation of a combined print job comprising a plurality of user jobs, but the generation of a combined print job comprising *interleaving* (emphasis added) sub-jobs and original print jobs. No combination of the cited prior art teaches this element.

IV. Rejection under 35 U.S.C. § 103(a) over Takeda in view of Wanda and further in view of Rabjohns et al., U.S. Patent No. 5,697,040 (hereinafter, "Rabjohns et al.").

i. Claims 12, 14 and 15

Claim 12 depends from independent claim 1, and comprises all the limitations therein.

This rejection of the applicant's claim is improper and the *prima facie* case of obviousness cannot be properly made because the rejection is based upon a modification of a reference that destroys the intent, purpose or function of the invention disclosed in the reference as argued in section 7, subsection I, sub-subsection i. The examiner's rejection of the applicant's claims is further improper and the *prima facie* case of obviousness cannot be properly made due to lack of basis in the art for combining and modifying the references as argued in section 7, subsection I, sub-subsection i.

The examiner acknowledges that Takeda does not disclose expressly a method comprising generating a combined print job comprising a plurality of user jobs, and the examiner relies on the teachings of Wanda for generating a combined print job comprising a plurality of user jobs.

The claimed embodiments of the applicant's invention partition print jobs into sub-jobs and form a single logical print job by alternating sub-jobs from the separate print jobs at a non-printing device prior to any print job being sent to a printer. The combined print job may then be sent to the printer where the print job prints as a single job. This element appears in independent claim 1, from which claim 12 depends. The applicant asserts that the element of the claimed embodiments of the applicant's invention is not the generation of a combined print job comprising a plurality of user jobs, but the generation of a combined print job comprising *interleaving* (emphasis added) sub-jobs and original print jobs. No combination of the cited prior art teaches this element.

Claims 14 is an independent claim comprising an element wherein a combined print job is formed by interleaving sub-jobs resulting from the partitioning of a larger print job with a smaller print job. Claim 15 depends from claim 14 and comprises all the limitations therein.

This rejection of the applicant's claim is improper and the *prima facie* case of obviousness cannot be properly made because the rejection is based upon a modification of a reference that destroys the intent, purpose or function of the invention disclosed in the reference as argued in section 7, subsection I, sub-subsection i. The examiner's rejection of the applicant's claims is further improper and the *prima facie* case of obviousness cannot be properly made due to lack of basis in the art for combining and modifying the references as argued in section 7, subsection I, sub-subsection i.

The examiner acknowledges that Takeda does not disclose expressly a method comprising generating a combined print job comprising a plurality of user jobs, and the examiner relies on the teachings of Wanda for generating a combined print job comprising a plurality of user jobs.

The claimed embodiments of the applicant's invention partition print jobs into sub-jobs and form a single logical print job by alternating sub-jobs from the separate print jobs at a non-printing device prior to any print job being sent to a printer. The combined print job may then be sent to the printer where the print job prints as a single job.. This element appears in independent claim 14 as below:

“forming a combined print job, wherein said forming comprises interleaving  
said sub-jobs with said smaller original print job.”

The applicant asserts that the element of the claimed embodiments of the applicant's invention is not the generation of a combined print job comprising a plurality of user jobs, but the generation of a combined print job comprising *interleaving* (emphasis added) sub-jobs and original print jobs. No combination of the cited prior art teaches this element.

Reversal of the Examiner's rejections and allowance of the pending claims is respectfully requested.

Respectfully submitted,

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Date: April 30, 2007

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**CLAIMS APPENDIX**

Listing of claims:

1. A method for interleaving print jobs, said method comprising:  
  
receiving a plurality of original print jobs at a non-printer computing device;  
  
partitioning at least one of said original print jobs into a plurality of sub-jobs with  
said non-printer computing device;  
  
tagging said plurality of sub-jobs with an output mode code wherein said output mode  
code is the same for all sub-jobs originating from the same original print job; and  
  
generating a combined print job, wherein said generating comprises interleaving said  
sub-jobs and any remaining original print jobs with said non-printer computing  
device.
2. The method of claim 1 wherein said non-printer computing device is a computing  
device.
3. The method of claim 1 wherein said non-printer computing device is a network  
print server.
4. (canceled)
5. The method of claim 1 wherein said partitioning is performed by a software print  
system component in an operating system print server.

6. (canceled)
7. The method of claim 5 wherein said print system component is independent of an operating system print driver.
8. The method of claim 5 wherein said print system component is a network print spooler that is independent of a printer.
9. The method of claim 5 wherein said print system component is a network print driver.
10. The method of claim 1 wherein said partitioning results in sub-jobs of approximately equal size.
11. The method of claim 1 wherein said partitioning results in sub-jobs of approximately equal printing time.
12. The method of claim 1 wherein said interleaving places sub-jobs originating from smaller original print jobs toward the front of the print order.

13. A method for interleaving print jobs, said method comprising:

receiving a plurality of original print jobs at a non-printer, print system component before said original print jobs arrive at a printer;  
partitioning at least one of said original print jobs into a plurality of sub-jobs with said print system component;  
tagging said plurality of sub-jobs with an output mode code wherein said output mode code is the same for all sub-jobs originating from the same original print job;  
generating a combined print job, wherein said generating comprises interleaving said sub-jobs and any remaining original print jobs with said print system component.

14. A method for reducing printing delay of smaller print jobs in a print queue, said method comprising:

receiving a plurality of original print jobs at a print system component before said original print jobs arrive at a printer, said plurality of original print jobs comprising at least one larger print job and at least one smaller print job;  
partitioning said larger original print job into a plurality of sub-jobs;  
tagging said smaller sub-jobs with an output mode code;  
forming a combined print job, wherein said forming comprises interleaving said sub-jobs with said smaller original print job.

15. The method of claim 14 further comprising partitioning said smaller original print job into sub-jobs and wherein said interleaving comprises interleaving said sub-jobs from said larger print job with said sub-jobs from said smaller print job.

16. A system for interleaving print jobs before said print jobs arrive at a printer, said system comprising:

a receiver for receiving a plurality of original print jobs, before said original print jobs arrive at a printer;

a partitioner for partitioning at least one of said original print jobs into a plurality of sub-jobs;

a tagger for tagging said plurality of sub-jobs with an output mode code wherein said output mode code is the same for all sub-jobs originating from the same original print job;

a combiner for forming a combined print job, wherein said combiner comprises an interleaver for interleaving said smaller sub-jobs and any remaining original print jobs.

17. A computer readable medium comprising instructions for performing functions within a non-printer, print system component, said instructions comprising the acts of:

receiving a plurality of original print jobs at a print system component before said original print jobs arrive at a printer;

partitioning at least one of said original print jobs into a plurality of sub-jobs;

tagging said plurality of sub-jobs with an output mode code wherein said output mode code is the same for all sub-jobs originating from the same original print job;

forming a combined print job, wherein said forming comprises interleaving said smaller sub-jobs with any remaining original print jobs.

18. (canceled)

Appl. No. 10/002,781  
Appeal Brief Dated April 30, 2007  
Reply to Office Action of November 17, 2006

**EVIDENCE APPENDIX**

No evidence is submitted.

**RELATED PROCEEDINGS APPENDIX**

There are no related proceedings.